U.S. Patent Application
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(PES_CES.001)

Marked-Up Copy of Claims Amended in the Supplemental Amendment

1. (Thrice Amended) A method of obtaining a cell population enriched for long-term repopulating human hematopoietic stem cells (HSCs), the method comprising isolating hematopoietic cells from a human hematopoietic tissue and separating cells that express KDR on their surface (KDR^+ cells) from cells that do not express KDR on their surface using a reagent selected from the group consisting of

i) an antibody that specifically binds with KDR,

ii) a portion of an immunoglobulin, wherein the portion specifically binds with KDR, and

iii) a conjugated vascular endothelial growth factor,

thereby obtaining a KDR^+ cell population that is enriched for long-term repopulating HSCs.

10. (Twice Amended) The method of claim 1, wherein the ~~KDR^+ cells are isolated using~~ reagent is a conjugated vascular endothelial growth factor.

18. (Thrice Amended) A method of preparing long-term repopulating human HSCs, the method comprising isolating hematopoietic progenitor cells (HPCs) from a human hematopoietic tissue and separating HPCs that express KDR on their surface (KDR^+ HPCs) from HPCs that do not express KDR on their surface using a reagent selected from the group consisting of

i) an antibody that specifically binds with KDR,

ii) a portion of an immunoglobulin, wherein the portion specifically binds with KDR, and

iii) a conjugated vascular endothelial growth factor,

whereby the isolated KDR^+ HPCs are enriched for long-term repopulating HSCs.

51. (Thrice Amended) A method of expanding long-term repopulating human HSCs, the method comprising isolating HSCs that express KDR on their surface (KDR^+ HSCs) from a human hematopoietic tissue using a reagent selected from the group consisting of

i) an antibody that specifically binds with KDR,

ii) a portion of an immunoglobulin, wherein the portion specifically binds with KDR, and

iii) a conjugated vascular endothelial growth factor

and incubating the HSCs with vascular endothelial growth factor to expand the HSCs.

69. (Thrice Amended) A method of isolating a stem cell capable of giving rise to at least one of a muscle cell, a hepatic oval cell, a bone cell, a cartilage cell, a fat cell, a tendon cell, and a marrow stroma cell, the method comprising isolating a hematopoietic cell that expresses KDR on its surface from a human hematopoietic tissue using a reagent selected from the group consisting of

i) an antibody that specifically binds with KDR,

ii) a portion of an immunoglobulin, wherein the portion specifically binds with KDR, and

iii) a conjugated vascular endothelial growth factor,

thereby isolating the stem cell.

80. (Amended) A method of obtaining a cell population enriched for long-term repopulating human hematopoietic stem cells (HSCs), the method comprising isolating hematopoietic cells from a human hematopoietic tissue and separating cells that express KDR on their surface but do not express a late marker on their surface from cells that either do not express KDR on their surface or express a late marker on their surface, the isolation method comprising using a reagent selected from the group consisting of

i) an antibody that specifically binds with KDR,

ii) a portion of an immunoglobulin, wherein the portion specifically binds with KDR, and

iii) a conjugated vascular endothelial growth factor,

thereby obtaining a cell population that is enriched for long-term repopulating HSCs.

83. (Amended) A method of preparing long-term repopulating human HSCs, the method comprising isolating cells that express KDR on their surface and do not express a first early marker on their surface ($KDR^{+}early^{-}$ cells) using, sequentially in either order, an antibody which specifically binds with the first early marker and a reagent selected from the group consisting of

i) an antibody which specifically binds with KDR,

ii) a portion of an immunoglobulin, wherein the portion specifically binds with KDR, and

iii) a conjugated vascular endothelial growth factor.